# Maths: Progression and End Points at Foundry Lane Primary School

The National Curriculum for Primary subject covers the following areas:

## Number: Number and Place Value

| Counting | | | | | | |
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| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| have a deep understanding of numbers to 10, including the composition of each number.<br><br>Verbally count beyond 20, recognising the pattern of the counting system. | count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number<br><br>count, read and write numbers to 100 in numerals; count in multiples of twos, fives and tens<br><br>given a number, identify one more and one less | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward | count from 0 in multiples of 4, 8, 50 and 100;<br><br>find 10 or 100 more or less than a given number | count backwards through zero to include negative numbers<br><br>count in multiples of 6, 7, 9, 25 and 1000<br><br>find 1000 more or less than a given number | interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero<br><br>count forwards or backwards in steps of powers of 10 for any given number up to 1000 000 | use negative numbers in context, and calculate intervals across zero |
| **Comparing numbers** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Compare quantities up to 10. Recognising when quantity is greater than, less than or the same as another quantity. | use the language of: equal to, more than, less than (fewer), most, least | compare and order numbers from 0 up to 100; use and = signs | compare and order numbers up to 1000 | order and compare numbers beyond 1000<br>compare numbers with the same number of decimal places up to two | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Reading and Writing Numbers) | read, write, order and compare numbers up to 10 000000 and determine the value of each digit (appears also in Reading and Writing Numbers) |

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| | | | | decimal places (copied from Fractions) | | |
| **Identifying/ representing / estimating numbers** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Subitise numbers up to 5. | identify and represent numbers using objects and pictorial representations including the number line | identify, represent and estimate numbers using different representations, including the number line | identify, represent and estimate numbers using different representations | identify, represent and estimate numbers using different representations | | |
| **Reading and writing numbers including roman numerals.** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | read and write numbers from 1 to 20 in numerals and words. | read and write numbers to at least 100 in numerals and in words | read and write numbers up to 1000 in numerals and in words<br><br>tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24- hour clocks (copied from Measurement) | read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of zero and place value | read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit (appears also in Comparing Numbers)<br><br>read Roman numerals to 1000 (M) and recognise years written in Roman numerals. | read, write, order and compare numbers up to 10 000 000 and determine the value of each digit (appears also in Understanding Place Value) |
| **Understanding place value** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | recognise the place value of each digit in a | recognise the place value of each digit in a | recognise the place value of each digit in a four-digit number | read, write, order and compare numbers to at least 1 000 000 and | read, write, order and compare numbers up to 10 000 000 and |

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| | | two-digit number (tens, ones) | threedigit number (hundreds, tens, ones) | (thousands, hundreds, tens, and ones)<br>find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions) | determine the value of each digit (appears also in Reading and Writing Numbers)<br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (copied from Fractions) | determine the value of each digit (appears also in Reading and Writing Numbers) find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as units, tenths and hundredths (copied from Fractions)<br>identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places (copied from Fractions) |
| **Rounding** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | round any number to the nearest 10, 100 or 1 000<br><br>round decimals with one decimal place to the nearest whole number (copied from Fractions) | round any number up to 1 000 000 to the nearest 10, 100, 1 000, 10 000 and 100 000<br><br>round decimals with two decimal places to the nearest whole number and to one decimal place (copied from Fractions) | round any whole number to a required degree of accuracy<br><br>solve problems which require answers to be rounded to specified degrees of accuracy (copied from Fractions) |

| Problem solving | | | | | | |
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| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | use place value and number facts to solve problems | solve number problems and practical problems involving these ideas. | solve number and practical problems that involve all of the above and with increasingly large positive numbers | solve number problems and practical problems that involve all of the above | solve number and practical problems that involve all of the above |

## Number: Addition and Subtraction

| Number Bonds | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Automatically recall number bonds to 5 ( including subtraction facts) Automatically recall some number bonds to 10. | represent and use number bonds and related subtraction facts within 20 | recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 | | | | |
| Mental Calculations | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | add and subtract onedigit and two-digit numbers to 20, including zero | add and subtract numbers using concrete objects, pictorial representations, and mentally, including: * a two-digit number and ones * a two-digit number and tens * two two-digit numbers * adding three | add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds | | add and subtract numbers mentally with increasingly large numbers | perform mental calculations, including with mixed operations and large numbers<br><br>use their knowledge of the order of operations to carry out calculations involving the four operations |

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| | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Written Methods) | show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot | | | | |
| Written methods | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs (appears also in Mental Calculation) | | add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction | add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction wh | add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) | |
| Inverse operations, estimating and checking answers. | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems. | estimate the answer to a calculation and use inverse operations to check answers | estimate and use inverse operations to check answers to a calculation | use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. |
| Problem solving | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | solve one-step problems that involve addition and subtraction, using concrete objects and pictorial | solve problems with addition and subtraction: * using concrete objects and pictorial representations, | solve problems, including missing number problems, using number facts, place value, and more | solve addition and subtraction two-step problems in contexts, deciding which operations and | solve addition and subtraction multi-step problems in contexts, deciding which operations and | solve addition and subtraction multi-step problems in contexts, deciding which operations and |

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| | representations, and missing number problems such as 7 = ∗ - 9 | including those involving numbers, quantities and measures * applying their increasing knowledge of mental and written methods solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change (copied from Measurement) | complex addition and subtraction | methods to use and why | methods to use and why | methods to use and why<br><br>Solve problems involving addition, subtraction, multiplication and division |

# Multiplication and division

| **Multiplication and Division Facts** | | | | | | |
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| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| Automatically recall some double facts.<br><br>Explore odds and evens. | count in multiples of twos, fives and tens (copied from Number and Place Value) | count in steps of 2, 3, and 5 from 0, and in tens from any number, forward or backward (copied from Number and Place Value) | count from 0 in multiples of 4, 8, 50 and 100 (copied from Number and Place Value) | count in multiples of 6, 7, 9, 25 and 1 000 (copied from Number and Place Value) | count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000 (copied from Number and Place Value) | |
| | | recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers | recall and use multiplication and division facts for the 3, 4 and 8 multiplication tables | recall multiplication and division facts for multiplication tables up to 12 × 12 | | |

| **Mental Calculation** | | | | | | |
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| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times onedigit numbers, using mental and progressing to formal written methods (appears also in Written Methods) | use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers | multiply and divide numbers mentally drawing upon known facts | perform mental calculations, including with mixed operations and large numbers |
| | | show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot | | recognise and use factor pairs and commutativity in mental calculations (appears also in Properties of Numbers) | multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 | associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3/8) (copied from Fractions) |
| **Written Calculation** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |

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| | | calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs | write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods (appears also in Mental Methods) | multiply two-digit and three-digit numbers by a onedigit number using formal written layout | multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers | multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication |
| | | | | | divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context | divide numbers up to 4-digits by a two-digit whole number using the formal written method of short division where appropriate for the context divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context |

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| | | | | | | use written division methods in cases where the answer has up to two decimal places (copied from Fractions (including decimals)) |
| **Properties of Number: Multiples, Factors, Primes, Square and Cube Numbers** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | recognise and use factor pairs and commutativity in mental calculations (repeated) | identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. identify common factors, common multiples and prime numbers use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions) know and use the vocabulary of prime numbers, prime factors and composite (nonprime) numbers | identify common factors, common multiples and prime numbers<br><br>use common factors to simplify fractions; use common multiples to express fractions in the same denomination (copied from Fractions |

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| | | | | | establish whether a number up to 100 is prime and recall prime numbers up to 19 | |

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| | | | | | recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) | calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3 ) and cubic metres (m3 ), and extending to other units such as mm3 and km3 (copied from Measures) |
| **Order of Operations** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | | | | use their knowledge of the order of operations to carry out calculations involving the four operations |
| **Inverse Operations, Estimating and Checking Answers** | | | | | | |
| **Year R** | **Year 1** | **Year 2** | **Year 3** | **Year 4** | **Year 5** | **Year 6** |
| | | | estimate the answer to a calculation and use inverse operations to check answers (copied from Addition and Subtraction) | estimate and use inverse operations to check answers to a calculation (copied from Addition and Subtraction) | | use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy |

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# Fractions including decimals and percentages

| Counting in fractional steps | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | count up and down in tenths | count up and down in hundredths | | |
| **Recognising fractions** | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |

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| | recognise, find and name a half as one of two equal parts of an object, shape or quantity<br><br>recognise, find and name a quarter as one of four equal parts of an object, shape or quantity | recognise, find, name and write fractions $^{1}/_{3}$, $^{1}/_{4}$, $^{2}/_{4}$ and $^{3}/_{4}$ of a length, shape, set of objects or quantity | recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators<br><br>recognise that tenths arise from dividing an object into 10 equal parts and in dividing one – digit numbers or quantities by 10.<br><br>recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators | recognise that hundredths arise when dividing an object by one hundred and dividing tenths by ten | recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents (appears also in Equivalence) | |
| Comparing fractions | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | compare and order unit fractions, and fractions with the same denominators | | compare and order fractions whose denominators are all multiples of the same number | compare and order fractions, including fractions >1 |
| Comparing decimals | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | | compare numbers with the same number of decimal places up to two decimal places | read, write, order and compare numbers with up to three decimal places | identify the value of each digit in numbers given to three decimal places |

| Rounding including decimals | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | | round decimals with one decimal place to the nearest whole number | round decimals with two decimal places to the nearest whole number and to one decimal place | solve problems which require answers to be rounded to specified degrees of accuracy |
| Equivalence including fractions, decimals and percentages | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | write simple fractions e.g. 1 / 2 of 6 = 3 and recognise the equivalence of 2 / 4 and 1 / 2 | recognise and show, using diagrams, equivalent fractions with small denominators | recognise and show, using diagrams, families of common equivalent fractions<br><br>recognise and write decimal equivalents of any number of tenths or hundredths<br><br>recognise and write decimal equivalents to 1 / 4 ; 1 / 2 ; 3 / 4 | identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths<br><br>read and write decimal numbers as fractions (e.g. 0.71 = 71 / 100 )<br><br>recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents<br><br>recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with | use common factors to simplify fractions; use common multiples to express fractions in the same denomination<br><br>associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 / 8 )<br><br>recall and use equivalences between simple fractions, decimals and percentages, including in different contexts. |

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| | | | | | denominator 100 as a decimal fraction | |
| Addition and subtraction of fractions | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | add and subtract fractions with the same denominator within one whole (e.g. 5 / 7 + 1 / 7 = 6 / 7 ) | add and subtract fractions with the same denominator | add and subtract fractions with the same denominator and multiples of the same number<br><br>recognise mixed numbers fractions and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number (e.g. 2 / 5 + 4 / 5 = 6 / 5 = 1 1 / 5 ) | add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions |
| Multiplication and division of fractions | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |

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| | | | | | multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams | multiply simple pairs of proper fractions, writing the answer in its simplest form (e.g. 1 / 4 × 1 / 2 = 1 / 8 ) multiply one-digit numbers with up to two decimal places by whole numbers divide proper fractions by whole numbers (e.g. 1 / 3 ÷ 2 = 1 / 6 ) |
| Multiplication and division of decimals | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | | find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths | | multiply one-digit numbers with up to two decimal places by whole numbers find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths multiply and divide numbers by 10, 100 and 1000 where the answers are up to three decimal places identify the value of each digit to three decimal places and multiply and divide numbers by 10, 100 and 1000 where the |

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| | | | | | | answers are up to three decimal places associate a fraction with division and calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. 3 /8) use written division methods in cases where the answer has up to two decimal places |
| Problem solving | | | | | | |
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | solve problems that involve all of the above | solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number<br><br>solve simple measure and money problems involving fractions and decimals to two decimal places. | solve problems involving numbers up to three decimal places<br><br>solve problems which require knowing percentage and decimal equivalents of 1 / 2 , 1 / 4 , 1 / 5 , 2 / 5 , 4 / 5 and those with a denominator of a multiple of 10 or 25 | |

# Ratio and Proportion

| **Statements only appear in Year 6 but should be connected to previous learning, particularly fractions and multiplication and division** | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | | | | | solve problems involving the relative sizes of two quantities where missing values can be found by using integer multiplication and division facts<br><br>solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison<br><br>solve problems involving similar shapes where the scale factor is known or can be found<br><br>solve problems involving unequal sharing and grouping using knowledge of fractions and multiples. |

Measurement

| Comparing and Estimating | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Compare length, mass/weight, and capacity.<br><br>Use language of before, after, next, first, today, tomorrow, morning, afternoon and evening. | compare, describe and solve practical problems for: * lengths and heights [e.g. long/short, longer/shorter, tall/short, double/half] * mass/weight [e.g. heavy/light, heavier than, lighter than] * capacity and volume [e.g. full/empty, more than, less than, half, half full, quarter] * time [e.g. quicker, slower, earlier, later] | compare and order lengths, mass, volume/capacity and record the results using >, < and = | | estimate, compare and calculate different measures, including money in pounds and pence (also included in Measuring) | calculate and compare the area of squares and rectangles including using standard units, square centimetres (cm2) and square metres (m2) and estimate the area of irregular shapes (also included in measuring) | calculate, estimate and compare volume of cubes and cuboids using standard units, including centimetre cubed (cm3) and cubic metres (m3), and extending to other units such as mm3 and km3. |
| | sequence events in chronological order using language [e.g. before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening] | compare and sequence intervals of time | compare durations of events, for example to calculate the time taken by particular events or tasks | | estimate volume (e.g. using 1 cm3 blocks to build cubes and cuboids) and capacity (e.g. using water) | |
| | | | estimate and read time with increasing accuracy to the nearest minute; | | | |

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| | | | record and compare time in terms of seconds, minutes, hours and o'clock; use vocabulary such as a.m./p.m., morning, afternoon, noon and midnight (appears also in Telling the Time) | | | |

| Measuring and Calculating | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | measure and begin to record the following:<br>* lengths and heights<br>* mass/weight *<br>capacity and volume<br>* time (hours, minutes, seconds) | choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels | measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml) | estimate, compare and calculate different measures, including money in pounds and pence (appears also in Comparing)<br><br>measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres | use all four operations to solve problems involving measure (e.g. length, mass, volume, money) using decimal notation including scaling.<br><br>measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres | solve problems involving the calculation and conversion of units of measure, using decimal notation up to three decimal places where appropriate (appears also in Converting)<br><br>recognise that shapes with the same areas can have different perimeters and vice versa |

# Geometry- Position and Direction

| Position, Direction and Movement | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Describe position using vocabulary such as above, on top, under, though, next to, behind, over. | describe position, direction and movement, including half, quarter and three-quarter turns. | use mathematical vocabulary to describe position, direction and movement including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise) | | describe positions on a 2-D grid as coordinates in the first quadrant<br><br>describe movements between positions as translations of a given unit to the left/right and up/down<br><br>plot specified points and draw sides to complete a given polygon | identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed | describe positions on the full coordinate grid (all four quadrants)<br><br>draw and translate simple shapes on the coordinate plane, and reflect them in the axes. |
| Pattern | | | | | | |
| | | order and arrange combinations of mathematical objects in patterns and sequences | | | | |

# Geometry – shapes

| Identifying shapes and their properties | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| Begin to use the correct mathematical language to describe 2d and 3d shapes.<br><br>Pattern- create, copy and continue a pattern.<br><br>Shape- select, rotate and manipulate shapes to match a picture, fit an outline or create patterns. | recognise and name common 2-D and 3-D shapes, including:<br>* 2-D shapes [e.g. rectangles (including squares), circles and triangles]<br>* 3-D shapes [e.g. cuboids (including cubes), pyramids and spheres].<br>. | identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line<br><br>identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces<br><br>identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid] | | identify lines of symmetry in 2-D shapes presented in different orientations | identify 3-D shapes, including cubes and other cuboids, from 2-D representations | recognise, describe and build simple 3-D shapes, including making nets (appears also in Drawing and Constructing)<br><br>illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius |
| Drawing and Constructing | | | | | | |
| | | | illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius | complete a simple symmetric figure with respect to a specific line of symmetry | draw given angles, and measure them in degrees ($^{o}$) | draw 2-D shapes using given dimensions and angles<br><br>recognise, describe and build simple 3-D shapes, including making nets (appears also in Identifying Shapes and Their Properties) |

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| Comparing and Classifying | | | | | | |
| | | compare and sort common 2-D and 3-D shapes and everyday objects | | compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes | use the properties of rectangles to deduce related facts and find missing lengths and angles<br><br>distinguish between regular and irregular polygons based on reasoning about equal sides and angles | compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons |
| Angles | | | | | | |
| | | | recognise angles as a property of shape or a description of a turn<br><br>identify right angles, recognise that two right angles make a half-turn, three make three quarters of a turn and four a complete turn; identify whether angles are greater than or less than a right angle<br><br>identify horizontal and vertical lines and | identify acute and obtuse angles and compare and order angles up to two right angles by size | now angles are measured in degrees: estimate and compare acute, obtuse and reflex angles<br><br>identify:<br>* angles at a point and one whole turn (total 360°)<br>* angles at a point on a straight line and ½ a turn (total 180°)<br>* other multiples of 90° | recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles |

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| | | | pairs of perpendicular and parallel lines | | | |

## Statistics

| Interpreting, constructing and presenting data | | | | | | |
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| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | | interpret and construct simple pictograms, tally charts, block diagrams and simple tables<br><br>ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity<br><br>ask and answer questions about totalling and comparing categorical data | interpret and present data using bar charts, pictograms and tables | interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs | complete, read and interpret information in tables, including timetables | interpret and construct pie charts and line graphs and use these to solve problems |
| Solving Problems | | | | | | |
| | | | solve one-step and two-step questions [e.g. 'How many more?' and 'How many fewer?'] using information | solve comparison, sum and difference problems using information presented in bar charts, pictograms, | solve comparison, sum and difference problems using information presented in a line graph | calculate and interpret the mean as an average |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | presented in scaled bar charts and pictograms and tables. | tables and other graphs. | | |

## Algebra

| Equations | | | | | | |
|---|---|---|---|---|---|---|
| Year R | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |
| | *solve one-step problems that involve addition and subtraction, using concrete objects and pictorial representations, and* ***missing number problems*** *such as 7 = □ - 9* (copied from Addition and Subtraction)<br><br>*represent and use number bonds and related subtraction facts within 20* (copied from Addition and Subtraction) | *recognise and use the inverse relationship between addition and subtraction and use this to check calculations and* ***missing number*** *problems.* (copied from Addition and Subtraction)<br><br>*recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100* (copied from Addition and Subtraction) | solve problems, *including* ***missing number*** *problems, using number facts, place value, and more complex addition and subtraction.* (copied from Addition and Subtraction)<br><br>***solve problems, including missing number*** *problems, involving multiplication and division, including integer scaling* (copied from Multiplication and Division) | | *use the properties of rectangles to deduce related facts and find* ***missing lengths and angles*** (copied from Geometry: Properties of Shapes) | express missing number problems algebraically<br><br>find pairs of numbers that satisfy number sentences involving two unknowns<br><br>enumerate all possibilities of combinations of two variables |

| | | | | | | |
|---|---|---|---|---|---|---|
| Formulae | | | | | | |
| | | | | *Perimeter can be expressed algebraically as 2(a + b) where a and b are the dimensions in the same unit.* *(Copied from NSG measurement)* | | use simple formulae<br><br>recognise when it is possible to use formulae for area and volume of shapes (copied from Measurement) |
| Sequences | | | | | | |
| | *sequence events in chronological order using language such as: before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening* (copied from Measurement | *compare and sequence intervals of time* (copied from Measurement)<br><br>*order and arrange combinations of mathematical objects in patterns* (copied from Geometry: position and direction) | | | | generate and describe linear number sequences |